

REMARKS/ARGUMENTS

In the Office action mailed April 5, 2007, claims 1-18 were pending. Claims 1-7, 9-16 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 6,895,012 to Amou et al. ("Amou") in view of U.S. Pat. No. 7,016,366 to Kawarai et al. ("Kawarai"). Claims 8, 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Amou and Kawarai in view of U.S. Pat. No. 5,867,483 to Ennis Jr. et al. ("Ennis"). Claims 1-18 are still pending. The Examiner is thanked for attention to the application.

As an initial matter, the Office action states "Regarding claims 1, 10, Amou et al. disclose...the queue set includes bandwidth guaranteed queues, and by setting the weights of each of the bandwidth guarantee queues' correlates to bandwidth guaranteeing process...". (Office action, pages 2-3). Applicant is unable to find the quoted portion, "the queue set includes bandwidth guaranteed queues, and by setting the weights of each of the bandwidth guarantee queues", in the text of Amou. Amou however states that "The queue set 12 includes bandwidth guaranteed queues 13 and the priority queue class 14 as illustrated.", (Amou, col. 5, lines 17-18), and "By setting the weight ϕ_i of each of the bandwidth guaranteed queues 13 and the weight ϕ_p of the overall priority queue class 14 as in equations (4) and (5), achievement of both bandwidth guarantee and preferential control as aimed at by the present invention becomes easy." (Amou, col. 5, lines 55-59). It therefore appears as though some paraphrased portions of text were inadvertently demarcated with quotation marks.

Claims 1-7, 9-16 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Amou in view of Kawarai.

To establish a prima facie case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP § 2142 citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claim 1 recites "when no queues transmit units or packets using the bandwidth guaranteeing process". The Office action states that "Regarding claims 1, 10, Amou et al.

disclose...when no queues transmit units or packets using the bandwidth guaranteeing process (no queues transmit packet using the bandwidth guaranteeing process is interpreted as some or other queues transmit packet using bandwidth non-guaranteeing process, such as preferential controlled queues. Hence, 'when all of the priority queues of the priority queue class are empty' correlates to when no queues transmit units or packets using the bandwidth guaranteeing process; column 7, lines 54 - 60)". (Office action, page 3). Applicants respectfully disagree.

Amou states that "The queue set 12 includes bandwidth guaranteed queues 13 and the priority queue class 14 as illustrated." (Amou, col. 5, lines 17-18). Accordingly, Amou appears to teach distinct bandwidth guaranteed queues and priority queues. (Amou, col. 5, lines 17-18, FIG. 3). The Office Action states "Hence, 'when all of the priority queues of the priority queue class are empty' correlates to when no queues transmit units or packets using the bandwidth guaranteeing process". (Office action, page 3). However, as the two queue systems of Amou are distinct, it does not follow that because all of the queues of one queue system are empty that all of the queues of the second queue system are also empty.

The portion of Amou cited by the Office action therefore relates to when the priority queues are empty, and provides no indication as to when the bandwidth guaranteed queues are empty. Accordingly, Amou does not teach, disclose or suggest "when no queues transmit units or packets using the bandwidth guaranteeing process", as recited by claim 1. Further, none of the cited references, taken alone or in combination, teaches or suggests "when no queues transmit units or packets using the bandwidth guaranteeing process", as recited by claim 1. Accordingly, a prima facie case of obviousness has not been made and claim 1 is patentable for at least this reason.

Further, claim 1 recites "when no queues transmit units or packets using the bandwidth guaranteeing process...determining a first queue having a variable with a value fulfilling a predetermined criterion", among other elements.

The Office action states "Regarding claims 1, 10, Amou et al. disclose...when no queues transmit units or packets using the bandwidth guaranteeing process (no queues transmit packet using the bandwidth guaranteeing process is interpreted as some or other queues transmit packet

using bandwidth non-guaranteeing process, such as preferential controlled queues. Hence, 'when all of the priority queues of the priority queue class are empty' correlates to when no queues transmit units or packets using the bandwidth guaranteeing process; column 7, lines 54 - 60); determining a first queue having a variable with a value fulfilling a predetermined criterion ('the smaller the value of pri-i' correlates to a queue having a variable (interpreted as the value of pri-i) with a value fulfilling a predetermined criterion (interpreted as higher the priority); column 12, lines 39-42)". (Office action, pages 3-4).

As indicated above, col. 7, lines 54-60 of Amou relate to when the priority queues are empty, not when the bandwidth guaranteed queues are empty. Accordingly, Amou does not teach, suggest or disclose "when no queues transmit units or packets using the bandwidth guaranteeing process...determining a first queue having a variable with a value fulfilling a predetermined criterion", among other elements recited by claim 1. Further, none of the cited references, taken alone or in combination, teaches or suggests "when no queues transmit units or packets using the bandwidth guaranteeing process...determining a first queue having a variable with a value fulfilling a predetermined criterion", among other elements recited by claim 1, and claim 1 is therefore allowable for at least this reason.

Moreover, in regard to FIG. 10 and the portion cited by the Office action, "when all of the priority queues of the priority queue class are empty", Amou further states, (col. 12, lines 35-42, underlining added):

Step S24: It is determined if the queue to be noted is active in state (having packets) and a queue of the priority queue class 14. If the answer is No, the operation routine returns to the original processing again.

Step S25: When the priority order (priority) of the queue to be noted is larger than pri_i of the currently selected queue, the operation routine returns to the original processing. The smaller the value of pri_i, the higher the priority.

Thus, the portion recited by the Office action, "the smaller the value of pri_i", appears in Step S25 of Amou. However, in Amou it appears that Step S25 is not executed when all of the priority queues of the priority queue class 14 are empty for the Amou system. Accordingly, the Office action fails to demonstrate that the cited references, taken alone or in combination, teach, suggest or disclose "when no queues transmit units or packets using the bandwidth guaranteeing

process...determining a first queue having a variable with a value fulfilling a predetermined criterion", among other elements recited by claim 1. Accordingly, a prima facie case of obviousness has not been made and claim 1 is patentable for at least this reason.

Further still, claim 1 recites "when no queues transmit units or packets using the bandwidth guaranteeing process...transmitting a packet or unit from the first queue to the transmission medium". As indicated above, col. 7, lines 54-60 of Amou relate to when the priority queues are empty, not when the bandwidth guaranteed queues are empty. Accordingly, Amou does not teach, suggest or disclose "when no queues transmit units or packets using the bandwidth guaranteeing process...transmitting a packet or unit from the first queue to the transmission medium", among other limitations recited by claim 1. Further, none of the cited references, taken alone or in combination, teaches or suggests "when no queues transmit units or packets using the bandwidth guaranteeing process...transmitting a packet or unit from the first queue to the transmission medium", among other elements recited by claim 1, and claim 1 is therefore allowable for at least this reason.

Moreover, the Office action states that "Regarding claims 1, 10, Amou et al. disclose...transmitting a packet or unit from the first queue to the transmission medium ('this queue i is selected and select=1 is output from the selecting means' correlates to transmitting a packet or unit from the first queue to the transmission medium; column 12, lines 54 - 58)". (Office action, page 4). However, Amou states that "The selecting means 34 outputs the packet information to be given to the weight sum computing means 23 next based on the 'queue state' information, 'priority order' information, and 'priority queue' information from the means 31, 32, and 33." (Amou, cols. 6-7, lines 66-03). It therefore does not appear the statement of Amou that "this queue i is selected and select=1 is output from the selecting means" correlates to transmitting a packet or unit from that queue to the transmission medium, and claim 1 is allowable for at least this reason.

Further still, claim 1 recites:

3. when no queues transmit units or packets using the bandwidth guaranteeing process...determining a new value for the variable of the first queue, the new value relating to a mathematical operation

using a previous value for the variable at a point in time prior to transmission of the packet or unit and a factor scaling with/relating to the priority or quality of the first queue multiplied with a factor relating to a size of the packet or unit transmitted from the first queue and/or a period of time used for transmitting the packet or unit, where the mathematical operation brings the new value to, compared to the previous value, not fulfill the predetermined criterion.

With regard to this element of claim 1, the Office action recites "computes the service time F_i of the queue i , stores F_i after this computation in the memory' correlates to determining a new value for the variable of the queue...". Applicants respectfully disagree. For the aforementioned reasons, Amou does not appear to teach "when no queues transmit units or packets using the bandwidth guaranteeing process". Accordingly, it does not appear that any of the cited references, taken alone or in combination, teach, suggest or disclose "when no queues transmit units or packets using the bandwidth guaranteeing process...determining a new value for the variable of the first queue, the new value relating to a mathematical operation using a previous value for the variable at a point in time prior to transmission of the packet or unit and a factor scaling with/relating to the priority or quality of the first queue multiplied with a factor relating to a size of the packet or unit transmitted from the first queue and/or a period of time used for transmitting the packet or unit, where the mathematical operation brings the new value to, compared to the previous value, not fulfill the predetermined criterion", among other elements recited in claim 1. Accordingly, a prima facie case of obviousness has not been made and claim 1 is patentable for at least this reason.

Claim 10 recites "means for, when no queues transmit units or packets using the bandwidth guaranteeing process", among other elements. For the aforementioned reasons, the cited references, considered alone or in combination, do not teach, suggest or disclose "means for, when no queues transmit units or packets using the bandwidth guaranteeing process", among other elements recited in claim 10. Accordingly, claim 10 is patentable for at least this reason.

Further, claim 10 recites "means for, when no queues transmit units or packets using the bandwidth guaranteeing process...determining a first queue having data and having a variable

with a value fulfilling a predetermined criterion", among other elements. For the aforementioned reasons, the cited references, considered alone or in combination, do not teach, suggest or disclose "means for, when no queues transmit units or packets using the bandwidth guaranteeing process...determining a first queue having data and having a variable with a value fulfilling a predetermined criterion", among other elements recited in claim 10. Accordingly, claim 10 is patentable for at least this reason.

Moreover, claim 10 recites "means for, when no queues transmit units or packets using the bandwidth guaranteeing process...transmitting a packet or unit from the first queue to the transmission medium", among other elements. For the aforementioned reasons, the cited references, considered alone or in combination, do not teach, suggest or disclose "means for, when no queues transmit units or packets using the bandwidth guaranteeing process...transmitting a packet or unit from the first queue to the transmission medium", among other elements recited in claim 10. Accordingly, claim 10 is patentable for at least this reason.

Further still, claim 10 recites "means for, when no queues transmit units or packets using the bandwidth guaranteeing process...determining a new value for the variable of the first queue, the new value relating to a mathematical operation using a previous value for the variable at a point in time prior to transmission of the packet or unit and a factor scaling with/relating to the priority or quality of the first queue multiplied with a factor relating to a size of the packet or unit transmitted from the first queue and/or a period of time used for transmitting the packet or unit, where the mathematical operation brings the new value to, compared to the previous value, not fulfill the predetermined criterion", among other elements. For the aforementioned reasons, the cited references, considered alone or in combination, do not teach, suggest or disclose "means for, when no queues transmit units or packets using the bandwidth guaranteeing process...determining a new value for the variable of the first queue, the new value relating to a mathematical operation using a previous value for the variable at a point in time prior to transmission of the packet or unit and a factor scaling with/relating to the priority or quality of the first queue multiplied with a factor relating to a size of the packet or unit transmitted from the first queue and/or a period of time used for transmitting the packet or unit, where the

Appln No. 10/081,152
Amdt date October 5, 2007
Reply to Office action of April 5, 2007


mathematical operation brings the new value to, compared to the previous value, not fulfill the predetermined criterion", among other elements recited in claim 10. Accordingly, claim 10 is patentable for at least this reason.

Claims 2-9 depend from claim 1, which is patentable for the aforementioned reasons. Accordingly, claims 2-9 are patentable for at least this reason.

Claims 11-18 depend from claim 10, which is patentable for the aforementioned reasons. Accordingly, claims 11-18 are patentable for at least this reason.

Accordingly, the application is now in condition for allowance, and allowance of same is respectfully requested.

Respectfully submitted,
CHRISTIE, PARKER & HALE, LLP

By 
Daniel M. Cavanagh
Reg. No. 41,661
626/795-9900

DMC/GXF/mr

MIR IRV1109491.2.*-10/5/07 12:02 PM